

Work Order ID 164142

Thursday, July 13, 2017 2:52:53 PM

164142

~~PRELIMINARY ISSUE~~

Page 1

Item ID: D6210-144

Accept

N9000040100

Setup Start

NS1

Revision ID: PRELIM

Item Name: Tube, Seamless 144" Long

Stop

NS2

Start Date: 7/13/2017 Start Qty: 40.00

Required Date: 7/24/2017 Req'd Qty: 40.00

Reference:

DAS

Approvals:

Process Plan:

13
9-08

Date: JUL 13 2017

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D6210

A3 Rev A DAS

100

PURCHASING

0.00

100

Purchasing

Memo

0.00

Purchasing

Issue P/O

37040

40

JUL 13 2017

DAS

13
9-08

a) Extrude as per Dwg D6210

b) Material: AISI 304 SEAMLESS TUBE, 1/8 HARD PER AMS 5566 OR AMS-T-6845 OR MIL-T-6845

c) Minimum ultimate tensile strength = 105 ksi

d) Minimum tensile yield strength = 75 ksi

e) Material certification is required

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

Work Order ID 164142

Thursday, July 13, 2017 2:52:53 PM

164142

Page 2

Item ID: D6210-144 Accept ***N9000040100*** Setup Start ***NS1***
Revision ID: PRELIM Stop ***NS2***
Item Name: Tube, Seamless 144" Long
Start Date: 7/13/2017 Start Qty: 40.00 ***40*** Cust Item ID:
Required Date: 7/24/2017 Req'd Qty: 40.00 ***40*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110 *110* Packaging Packaging	Receive & Inspect for Damage & Mat'l Certs Memo Ensure material certification is attached	0.00 0.80							
120 *120* QC Quality Control	QC18 In-Coming Inspection Material Memo Ensure Material certification comply to Dwg D6210	0.00 0.00							
130 *130* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo <i>N/A</i>	0.00 0.00							

41.917re
SP 17-9-22

(40) *17.09.26* *DAS*
8.80

Work Order ID 164142

Thursday, July 13, 2017 2:52:53 PM

164142

Page 3

Item ID: D6210-144 Accept *N9000040100* Setup Start *NS1*
Revision ID: PRELIM Stop *NS2*
Item Name: Tube, Seamless 144" Long
Start Date: 7/13/2017 Start Qty: 40.00 *40* Cust Item ID:
Required Date: 7/24/2017 Req'd Qty: 40.00 *40* Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Identify as per dwg & Stock Location: <u>MAT33</u>	0.00							
140									
Packaging	Memo	0.40				(314)			DAS 23 18/2/12
Packaging									9-89
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	4.00							
Quality Control									

POSITIVE RECALL

EFFECTIVE _____ AUTH _____

RELEASED 18-02-12 DATE _____

Q Rev A
per ECN 11-123

u 17.09.20

GIVE TO
LAURA TO
CHANGE STATUS
& LOCATION

Picklist Print

Thursday, July 13, 2017 2:52:51 PM

Page 1

Work Order ID: 164142

164142

Parent Item: D6210-144

D6210-144

Parent Item Name: Tube, Seamless 144" Long

Start Date: 7/13/2017

Required Date: 7/24/2017

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP Rev.A 17.07.13 New issue DP Verify DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6210P

Purchased

No

100

Each

0.0000

1

40

D6210P

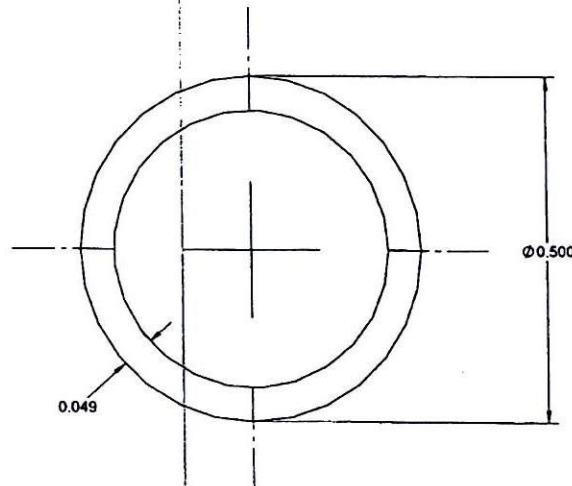
**

304 Tube, Seamless 1/8 HARD

41.97 ft

SPN-9-22

SPECIFICATION CONTROL DRAWING



D6210-XXX TUBE, SEAMLESS
WHERE XXX IS LENGTH IN INCHES
EG. 144" LONG TUBE: D6210-144

DAS
13
9-89

JUL 13 2017

W/O: 164142

NOTES:

- 1) MATERIAL: AISI 304 SEAMLESS TUBE, 1/8 HARD PER AMS 5566 OR AMS-T-6845 OR MIL-T-6845
MINIMUM ULTIMATE TENSILE STRENGTH = 105KSI
MINIMUM YIELD TENSILE STRENGTH = 75KSI
- 2) FINISH: NONE
- 3) TOLERANCES: PER ASTM A 450/A 450M AS FOLLOWS
O.D.: 0.500 ± 0.004 MEAN (± 0.010 INCLUDING OVALITY)
WALL: $0.049 + 0.010$ / -0.000
LENGTH: XXX $+0.125/-0.000$
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.24 lbs/ft

DAS
5
9-89

PRELIMINARY ISSUE

A NEW ISSUE		NO	17.06.20
REV.	DESCRIPTION	BY	DATE
DESIGN	NO		
DRAWN	NO		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	17.06.20		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D6210** REV. A3
SHEET 1 OF 1
TITLE **TUBE, SEAMLESS, 304 1/8 HD** SCALE **NTS**

COPYRIGHT © 2017 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER
Purchase Order ID PO37040

Purchase Order Date 7/13/2017
PO Print Date 7/14/2017

Page Number 3 of 4

Order From:

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VUJ-TWM001

Ship To: DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

585 768 5600

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

YRC COLLECT

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

FCA - (Free Carrier)

40.00

\$5.15

\$206.00

5 M6061T6T0.625W.125

6061-T6 RD Tube 0.625
X.125W

7/21/2017

Yes

7/21/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

recu 48 ft
4x

Line Total:

\$206.00

6 M304TR0.750W.049

304 RD Tube .750 x .049W

7/21/2017

Yes

7/21/2017

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

60.00

\$2.10

\$126.00

SP17-7-20
3x

Line Total:

\$126.00

7 D6210P

304 Tube, Seamless 1/8
HARD

7/21/2017

Yes

7/21/2017

40.00

\$11.50

\$460.00

Each

recu 23.750

SP17-8-1

AS PER D6210 REV. A3

D164142

MATERIAL: 304 ROUND TUBING SEAMLESS, 1/8 HARD AS PER AMS 5566 OR AMS T-6845 OR MIL-T-6845

→ recu. 41.97 ft.

→ SP17-9-22

Note:

7/14/2017



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 70662543

FROM: ATLA

PAGE 1

CUST NUMBER: 1203820 NET WGT:
SOLD TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA

9.889 REQ.DATE: 09/15/17 CONFIRMED
SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
ONTARIO CANADA

CN K6A 1K7

SALESPERSON: DONNA SMALLEY
TERMS: NET 30 DAYS
F.O.B.: SHIPPING POINT
CUST ORD NO.: P037040 IT 7

SHIP BY: 09/12/17
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION
0001 36510 SMLS CD 304 6845 1/8 HD 1/2 X .049

WIDTH LENGTH
17/24 FT

CLN# ORD QTY
40.000 FT

INVOICE QTY
41.917 FT

SHIPPED QTY
41.917 FT

WT
9.889

PCS
2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR
PO: 49372279 HT: 547927 PC: 2
MLT: SWEDEN MFG: UNITED STATES

Expiration Date: 0/00/00
CUSTOMER QTY:
SLB/CL: 65909

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
B1	REDDICRATE	1.000	50.000	4.0000	260.0000	6
		1.000	50.000			

BY:
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED

DATE FILLED

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW
<http://www.twmetals.com/invoice-terms.html>

887-9-22



175 TUBEWAY
FOREST PARK GA 30297
Tel: 404-361-5050
FAX: 404-366-2765

Invoice#: 70662543
Cust. PO#: P037040 IT 7
Incoterms: SHIPPING POINT
Frt. Terms: PREPAID
Ship Via: COMMON CARRIER

COMMERCIAL INVOICE

Sold To: DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON CANADA Contact: CHANTAL 16136321053	Invoice Date: 9/12/17
	Ship Date: 9/12/17
	Payment Terms: NET 30 DAYS
	Ship To/Final Destination: DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON ONTARIO CANADA CN K6A 1K7
Freight Forwarder/Intermediate Ship To:	

ITEM#/LINE#	DESCRIPTION	QUANTITY	UNIT VALUE	SUBTOTAL
36510	SMLS CD 304 6845 1/8 HD 1/2 X .049	41.917 FT	\$ 11.5000 FT	\$ 482.05
1	STAINLESS STEEL TUBE ROUND	0 IN		
	PART NUMBER:	2.000 PC		
	ECCN: 2A991.d			
	SCHEDULE B: 7304.11.0000			
	NET WGT: 9.889 LBS			
	COUNTRY OF MFG: UNITED STATES			
	QUANTITY AND TYPE OF BOXES:			
	1 REDDICRATE			
	260.0000 X 4.0000 X 6.0000			
	TOTAL WGT: 50.000 LBS			
	GROSS WGT: 50.000 LBS			
EXPORT LICENSE NUMBER: NLR				
EXPIRATION DATE: 00/00/00				
TW METALS, INC CERTIFIES THAT THE COUNTRY OR COUNTRIES OF MANUFACTURE INDICATED ABOVE IS TRUE AND CORRECT AS CONTAINED IN THE RECORDS OF TW METALS, INC.				
THESE ITEMS ARE CONTROLLED BY THE U.S. GOVERNMENT AND AUTHORIZED FOR EXPORT ONLY TO THE COUNTRY OF ULTIMATE DESTINATION FOR USE BY THE ULTIMATE CONSIGNEE OR END-USER(S) HEREIN IDENTIFIED. THEY MAY NOT BE RESOLD, TRANSFERRED, OR OTHERWISE DISPOSED OF, TO ANY OTHER COUNTRY OR TO ANY PERSON OTHER THAN THE AUTHORIZED ULTIMATE CONSIGNEE OR END-USER(S), EITHER IN THEIR ORIGINAL FORM OR AFTER BEING INCORPORATED INTO OTHER ITEMS, WITHOUT FIRST OBTAINING APPROVAL FROM THE U.S. GOVERNMENT OR AS OTHERWISE AUTHORIZED BY U.S. LAW AND REGULATIONS.				
			Sales Tax	.00
			Payable in US Dollars	482.05

Handwritten: 9-22



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 70662543

FROM: ATLA

PAGE 2

CUST NUMBER: 1203820 NET WGT: 9.889 REQ.DATE: 09/15/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 09/12/17
TERMS: NET 30 DAYS 175 TUBEWAY
F.O.B.: SHIPPING POINT FOREST PARK GA 30297
CUST ORD NO.: P037040 IT 7
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

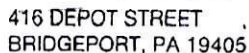
"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk _____ Date: 9/12/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



PH: (610) 279-7700
FAX: (610) 277-2005

Accredited
Nadcap[™]

ISO/IEC 17025
Materials Testing Laboratory

Visual	Passed
Grain Size	ASTM# 7
Passivat	PASSED
Flare	PASSED > .656" - 74°
Profilometer	OD RHR 13 / ID RHR 37
Loose Mtl Check	PASSED

Dimensional	Passed
Bend	PASSED
Embrittlement	PASSED
Eddy Current	PASSED 10% Notch Level
Hydrostatic	PASSED 16,200 PSI
Surface	PASSED

LEAK TEST - PASSED

I certify that this is correct and conforms to above specifications.

Nicholas Ricci, Plant Metallurgist - 08/25/2017 Page 1 of 1

The test report shall not be reproduced except in full, without the written approval of the laboratory. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

W. A. R.



O'Neal High-Performance Metals Group

Customer		DART AEROSPACE LTD
PO Number		P037040 IT 7
TW Order Number		70662543
Customer Number		1203820

Order Documentation:

- Packing List**
- Material Test Report**



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 70662543 FROM: ATLA PAGE 1

CUST NUMBER: 1203820 NET WGT: 9.889 REQ.DATE: 09/15/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 09/12/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: P037040 IT 7 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0001 36510 SMLS CD 304 6845 1/8 HD 1/2 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	40.000 FT	41.917 FT	41.917 FT	9.889	2

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
PO:49372279 HT:547927 PC: 2 CUSTOMER QTY: UOM
MLT:SWEDEN MFG:UNITED STATES SLB/CL:65909

BROKERS KUEHNE AND NAGEL LTD

-----		PACK INFO				-----	
AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT	
B1	REDDICRATE	1.000	50.000	4.0000	260.0000	6	

		1.000	50.000				

BY:
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED _____

1

DATE FILLED

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 70662543

FROM: ATLA

PAGE 2

CUST NUMBER: 1203820	NET WGT: 9.889	REQ. DATE: 09/15/17	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON:	DONNA SMALLEY	SHIP BY:	09/12/17
TERMS:	NET 30 DAYS	175 TUBEWAY	
F.O.B.:	SHIPPING POINT	FOREST PARK	GA 30297
CUST ORD NO.:	P037040 IT 7		
VIA:	COMMON CARRIER		
FREIGHT:	PREPAID		
RELEASE NO.:			
RECEIVING PHONE:			

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Electronically Generated Document-Valid Without Signature Date: 9/12/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



416 DEPOT STREET
BRIDGEPORT, PA 19405

PH: (610) 279-7700
FAX: (610) 277-2005

TEST REPORT



ISO/IEC 17025
Materials Testing Laboratory

TMI Mill# 49917-9	TMI Lot# 65909	Customer P.O. # M49372279	Quantity 517 ft.
Sold to: TW Metals PO Box 644 760 Constitution Dr. Exton, PA, 19341		Type & Grade 304 Seamless	Size 0.5000" +/- 0.0030 OD 0.0490" +/- 10% Wall
☒ FAR TAA ☒ DFARS BAA ☒ FAR BAA		Specifications AMS-5566 Rev. M, MIL-T-6845 TYPE I 1/8 Hard Rev. D, AMS-T-6845 TYPE I 1/8 Hard Rev. B, DFARS Compliant, DFAR 252.225-7014	

Chemical Analysis (Wt %)

HEAT#: 547927

Melt Source / Analysis: SANDVIK-SWEDEN

C	Mn	P	S	Si	Cr	Ni	Mo	Ti	Cu	Fe
.015	1.64	.029	.009	.30	18.33	10.17	.37	.003	.26	68.675
N	Cb									
.033	.01									

Mechanical Properties

Tensile Strength		0.2% Offset Yield Strength		% Elongation	Hardness
109,000	PSI	94,500	PSI	30	
109,000	PSI	92,000	PSI	29	

TEST REPORTS
ACCEPTED BY
49372279
SEP 01 2017
TW METALS
Paula Hamm

Visual	Passed
Grain Size	ASTM# 7
Passivat	PASSED
Flare	PASSED > .656" - 74°
Profilometer	OD RHR 13 / ID RHR 37
Loose Mtl Check	PASSED

Dimensional	Passed
Bend	PASSED
Embrittlement	PASSED
Eddy Current	PASSED 10% Notch Level
Hydrostatic	PASSED 16,200 PSI
Surface	PASSED

LEAK TEST - PASSED

I certify that this is correct and conforms to above specifications.

The test report shall not be reproduced except in full, without the written approval of the laboratory. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

Nicholas Ricci, Plant Metallurgist

08/25/2017 Page 1 of 1

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6210P

PO / BATCH NO.: P037040

DATE: SEP 22 2017

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 42'
 QUANTITY INSPECTED: 42'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500
 THICKNESS RECEIVED: .500
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	☒ Y ☒ N	
CORRECT FINISH	☒ Y ☒ N	
CORROSION	☒ Y ☒ N	
CORRECT GRAIN DIRECTION	☒ Y ☒ N	
CORRECT MATERIAL PER M-DRAWING	☒ Y ☒ N	AMS 5666
CORRECT THICKNESS	☒ Y ☒ N	
PHOTO REQUIRED	☒ Y ☒ N	
CORRECT REF # TO LINK CERT	☒ Y ☒ N	HT # 547927
CORRECT MATERIAL IDENTIFICATION	☒ Y ☒ N	
CORRECT M# ON THE MATERIAL	☒ Y ☒ N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	☒ Y ☒ N	
DOES THIS REQUIRE AN EXTRUSION REPORT	☒ Y ☒ N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AS 5</u> DATE: <u>SEP 22 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER REQUIREMENTS
 - 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
 - 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
 - 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
 - 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART RELEASED M-DRAWING
 - 6- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING & RECORD
- note Aluminum material only

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

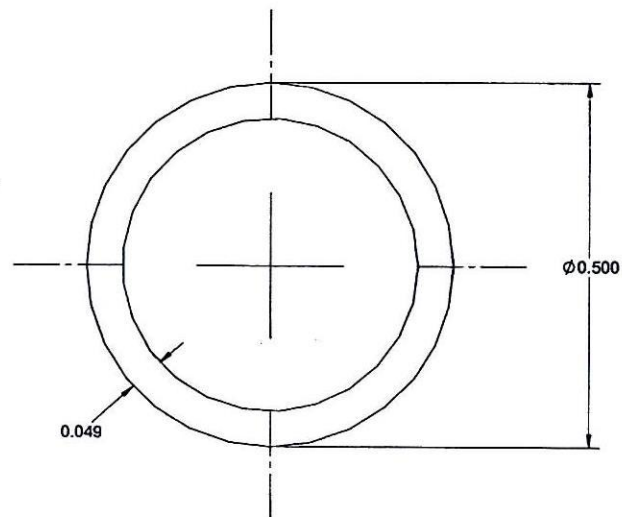
- 1- VERIFY TO DART SUPPLIED DRAWING
 - 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
 - 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
 - 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING
- AFTER MATERIAL PASSES INSPECTION**
- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN 20pcs FOR FULL INSPECTION
 - 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER

SPECIFICATION CONTROL DRAWING



D6210-XXX TUBE, SEAMLESS
WHERE XXX IS LENGTH IN INCHES
EG. 144" LONG TUBE: D6210-144

NOTES:

- 1) MATERIAL: AISI 304 SEAMLESS TUBE, 1/8 HARD PER AMS 5566 OR AMS-T-6845 OR MIL-T-6845
MINIMUM ULTIMATE TENSILE STRENGTH = 105KSI
MINIMUM YIELD TENSILE STRENGTH = 75KSI
- 2) FINISH: NONE
- 3) TOLERANCES: PER ASTM A 450/A 450M AS FOLLOWS
O.D.: 0.500 ± 0.004 MEAN (± 0.010 INCLUDING OVALITY)
WALL: 0.049 ± 0.010 /-0.000
LENGTH: XXX $+0.125/-0.000$
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.24 lbs/ft

RELEASED
2017-10-31
EAW 17-726

APPROVED

A		NEW ISSUE		NO	17.06.20
REV.		DESCRIPTION		BY	DATE
DESIGN	NO	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWN	NO				
CHECKED	AJS	DRAWING NO. D6210			REV. A
MFG. APPR.	DP	TITLE			SHEET 1 OF 1
APPROVED	WM	TUBE, SEAMLESS			SCALE
DE APPR.	DS				NTS
DATE		17.06.20			

COPYRIGHT © 2017 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD